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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,475	09/15/2003	George E Berkey	SP02-212	2892
22928	7590	10/23/2006	EXAMINER	
CORNING INCORPORATED			HOFFMANN, JOHN M	
SP-TI-3-1				
CORNING, NY 14831			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/663,475

Applicant(s)

BERKEY ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election of Group I in the reply filed on 8/22/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim 20 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/22/2006.

### *Claim Objections*

Claims 13-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

The depositing step of claim 1 requires depositing glass on the outer surface of the composite body. Claim 13 requires repeating the step. However that outer surface no longer exists (or is no longer available) to permit depositing gas. In other words claim 13 requires the surface still exists but claim 1 requires it does not exist. Thus claim 13 takes the scope of claim 1 and make it mutually exclusive of what claim 1 actually requires. Thus claim 13 does not further limit it – it takes it to a completely different scope. Claims 13-14 are not treated further on the merits.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 and 14-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term 'compound' (at each occurrence in the claims) makes the claims ambiguous as to what is meant. In paragraph [0005] of the specification, it is indicated that D2 can be a compound and [0050] suggests that OD and OH can be compounds. However as indicated in Grant and Hackh's Chemical Dictionary, a compound is a substance whose molecules consists of unlike elements and whose constituents cannot be separated by physical means. D2 does not consist of unlike elements, and OD and OH are not substances – they are only ions. Since applicant is using the term "compound" in a manner which contradicts common usage and does not provide another definition, one would not be able to ascertain what applicant means by "compound".

Claim 1, line 9, there is no antecedent basis for "the entire glass portion" – it is unclear if it is the same thing as the "consolidated glass portion" or the entire composite or something else.

Claim 6: there is confusing antecedent basis for "chlorine-compound-containing atmosphere" and for the exposing step. It is unclear whether this is an additional step/atmosphere or if it further limits the atmosphere/step of claim 4.

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Claim 16: it is not understood what is meant by a "radial thickness". A review of the prior art indicates that the term "radial thickness" refers to the difference between the outer radius of a layer and the inner radius. But claim 16 and applicant's drawings suggest that it is merely a radius and not a thickness. Applicant had not defined what the term "radial thickness" means. It is noted that for applicant to be their own lexicographer, they have to deliberately and clearly set forth the definition. This has not been done presently. It is deemed that one would not be able to ascertain what the metes and bounds of "radial thickness" are.

Claim 16: there is confusing antecedent basis for "deuterium compound": it is unclear if this is the same compound mentioned in claim 1.

Claim 17: there is no antecedent basis for "the reaction". Moreover, Examiner cannot understand what is meant by this claim. There is no explanation as to this aspect of the invention in the specification. There is confusing antecedent basis for "deuterium compound". Moreover for claims 18-19: it is unclear if "the deuterium compound" is referring to the compound of claim 17 or that of claim 1.

Claim 15: the term "desired" (depth) reads on a nebulous mental step conducted prior to the manipulative steps of the claimed process, hence rendering the present process claim unclear in meaning in scope. If applicant wishes to patent detail controls over the recited process, the process steps must be positively recited. See Seagram & Sons Inc. vs Marzall, 84 USPQ 180.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilliland 4810276 in view of Burrus 4515612.

Gilliland discloses the steps of providing a consolidated glass rod (feature 54, figure 4) and depositing a layer of silica soot (68) on the outer surface. Examiner notes that this is the conventional OVD process and that there are literally hundreds of other references that could have been used in place of Gilliland. Gilliland does not teach exposing the composite preform to an atmosphere containing deuterium.

Burrus teaches exposing preforms to deuterium to lower fiber loss: (col 2, lines 19-26). This treatment can be applied to composite preforms: (col. 4, line 61 – col. 5, line 2.) The treatment can be applied at any time (col. 6, lines 34-37) including after each layer is made (col. 5, lines 55-61). Col. 5, lines 7-16 indicates that treatment can be done prior to consolidation – and that such is “typically quite short”. It would have been obvious to treat with deuterium after each layer is deposited in the Gilliland/OVD method to lower fiber loss to the maximum extent.

As to the limitation that time and temperature being sufficient to cause the deuterium compound to penetrate without pervading. It is quite clear the compound penetrates (col 1, lines 66-68 and col. 2, line 65 to col. 3, line 3 and elsewhere in Burrus). From col. 3, lines 19-21 and elsewhere in Burrus: the compound does not pervade – it is reacted with OH. It is noted that there are at least two ways to interpret the “without pervading”: 1) that there is absolutely no compound that has pervaded, 2) that “the deuterium compound” (i.e. that which has diffused in) has not pervaded – that if any of the compound had been destroyed/converted, that “the” compound could not

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have pervaded because it no longer exists. Since the second interpretation is broader than the second – and since it appears to be reasonable (at least because neither the present disclosure nor the prior art appears to explicitly or implicitly suggest a specific interpretation for the claim language) – it is deemed that this second interpretation is the broadest reasonable interpretation, and thus the proper interpretation for examination purposes.

Claim 2: Based on col. 7, line 36 of Gilliland, hydrogen compounds are present – just as in applicant's invention. The hydrogen will inherently diffuse into the glass. Since applicant and Gilliland do substantially the same thing during deposition – (using a hydrogen-containing fuel) one would expect the same result: diffusion of hydrogen compounds as claimed.

Claim 3: it is deemed this is inherently met since applicant and does substantially the same thing as Burrus discloses.

Claims 4-5: see Gilliland col. 9, lines 20-27 and 48-51: for claim 7 it is deemed that one can call it a purge gas because it is used to purge water from the preform. As to claim 6: See col. 8, line 63 of Gilliland – it is inherent that the composite preform is contacted with chlorine compound during its production. Claim 8 is clearly met.

Claims 9-10: see col. 5, lines 50-55 of Burrus.

Claim 11: Examiner takes Official Notice that is well-known to use an inert purge gas in the fiber making art between steps, so as to remove left-over species from the previous step. It would have been obvious to purge the Burrus/Gilliland gases between steps, so as to prevent unintended consequences from the prior gases.



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Claim 12 is clearly met.

Claim 15: see col. 5 – line 31 of Burrus. It is deemed that “sufficient” is reads on “desired”.

Claim 16: it is deemed that that a portion with radial thickness of less than 0.0001 ppb of the radius cannot have more than 0.1 ppm of the total deuterium compound that is within the glass. Alternatively, one can find a radius small enough to make it possible – for example a radius that is comparable to the radius of an atom.

Claim 17 is met 0% of the compound is formed by the reaction: 100% of the compound is presumed to have been fabricated prior to the process.

Claims 18-19: Given two radii: for example 0.24869044576034543634 RC1 and .000000000002333333 RC1 it is impossible to have more than 0.1 ppm of the total deuterium compound at those two radii: these two radii are less than 0.5 RC1 It is noted that claims 18-19 are so broadly written that there are other interpretations that could have been used.

### ***Conclusion***

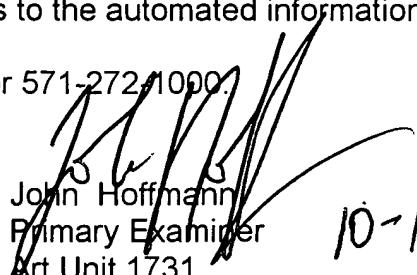
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nicholson and Tanaka are cited as being cumulative to Gilliland.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
John Hoffmann  
Primary Examiner  
Art Unit 1731

10-16-06

jmh